



# Impact of Absolute and Relative Commute Time on Work–Family Conflict: Work Schedule Control, Child Care Hours, and Life Satisfaction

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## Abstract

Flexibility is crucial when employees manage their work and family demands and their commute between home and work. The current study examined the direct and moderation effects of variables from multiple domains including work schedule control (work domain), childcare hours (family domain), and life satisfaction (overall life domain). The impact of the geographic context on work–family conflict was tested with two contextual variables that were generated with Geographic Information System (GIS) technology, where ‘absolute’ and ‘relative commute time’ were investigated in relation to work–family conflict. The participants participated in the National Study of Changing Workforce and completed an online survey on many work and family related variables. Results support the fact that commute time has an impact on work–family dynamics, that life satisfaction can influence this relationship, and that it is important to consider neighborhood in future research to better comprehend work–family interface issues. The study also highlights the importance of urbanization, relative and absolute commute time, etc. in impacting work–family conflict. Additionally, the study discusses the impact of COVID-19 on commute and one’s work–family dynamics. Future research directions are put forward to better understand work and family experiences in the post COVID-19 world.

**Keywords** Work–family conflict · Commute time · Work schedule control · Child care hours · Life satisfaction · Geographic context · COVID-19 pandemic

In 2013, Yahoo Chief Executive Officer Marissa Mayer issued a policy change on their long-standing telecommuting practice. Yahoo stated that “Speed and quality are often sacrificed when we work from home. We need to be one Yahoo!, and that starts with physically being together” (Wright 2013, p. 11). The rationale behind this policy change was based on the CEO’s belief that “some of the best decisions and insights come from hallway and cafeteria discussions, meeting new people and impromptu team meetings” (Wright 2013, p. 11).

Yahoo was not the only company that made this policy change. Other large companies including Best Buy, Bank of

America, Aetna, and IBM have also followed the same trend. Although these large companies have caught the media’s attention and it seems telecommuting has gone one way, data from the *National Study of Employers* have shown the opposite in that “regular telework has grown since 2012” (Matos et al. 2017, p. 6). With millennials entering the workplace, telecommuting has become a core value for this young generation because flexibility and work–life interactions are two major incentives that affect their motivation. The recent arrival of COVID-19 has also seemed to make telecommuting the new norm. Ironically, the morning traffic reports sound very similar to those before the pandemic. Although many businesses are closed, there is still a very active commuter population as some managers demand that employees report to the office. “All indications point to multiple return-to-the-office points, with some companies considering returning in significant numbers from early fall through 2021, and others maintaining a significant proportion of their workforce at home, indefinitely” (Gilchrist 2020, para 5). So, at this time, it appears that the demands of commuting are somewhat less since technology renders

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place of work a moot point for some workers. We believe that there is a strong pull toward the previous commuting status quo. Things may potentially revert to previous commuting intensity levels after there is “herd” immunity, very low transmission rates, or a viable vaccine. In spite of technology advancement, daily commuting would still be a reality for a large segment of the workforce.

In this study, we examine the relationship between commute time and work–family conflict, based on role theory. We also explore how variables from multiple domains including work schedule control in the work domain, child care time on work days in the family domain, life satisfaction in the general life domain, and geographic context in the spatial domain moderate this relationship. We try to establish that flexibility to manage commute time and family demands is a key element for human resources acquisition, organization success, and employee wellbeing. The study also discusses the impact of COVID-19 and provides directions for future research to enhance our understanding of work and family experiences with telecommuting as the new mode of employment.

## Theory, Literature Review, and Hypotheses

Role theory stipulates that our everyday activities involve acting out different roles that we engage in our lives (Scalambrino and Lowery 2017). For example, a working woman plays the role of an employee/manager, a daughter, a spouse or a mother, etc. (Beutell and Greenhaus 1982). Or, an employee may play the role of a student if they are also enrolled in a program of study simultaneously. Thus, the roles can be gender-based, cultural or socially expected, or situation specific. The common denominator is that each role has a set of duties, rights, and expectations associated with it (Biddle 1986). We behave in a more or less predictable way as we engage in each role and the actions associated with each role are therefore specific to that role. Role conflict tends to occur when there is a tension in trying to fulfill two incompatible roles (Kahn et al. 1964). At times, the individual may have restricted power to do something concrete about this situation because of restricted societal norms or situational factors. Following the concept of role conflict, Greenhaus and Beutell (1985) defined work–family conflict as “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). They explained that “participation in the work (family) role is made more difficult by virtue of participation in the family (work) role” (p. 77).

Work and home are the two major domains of an individual’s life. Several studies have highlighted the importance of work and family roles impacting job, family, and overall

life satisfaction (e.g., Beutell and Schneer 2014; Gopalan et al. 2018; Michel and Michel 2015). This remains a fact regardless of the sample that one studies. For example, in a study on academic faculty, Gopalan et al. (2018) found that work and family facilitation affected both job satisfaction and personal relationship satisfaction. Research on the work–family interface has focused on work–family conflict as well as on work–family synergy. That is, one’s work role can interfere with family or vice versa (i.e., WIF or FIW types of work family conflict). Or, work can have a facilitating impact on one’s family role or vice versa (i.e., work–family facilitation/synergy or family–work facilitation/synergy). It is important to study the constructs of ‘conflict’ and ‘synergy/facilitation’ between one’s work and family roles separately (Grzywacz and Bass 2003). Therefore, in this study, we focus on work–family conflict and how commute time influences conflict between work and family.

## Main Effect of Commute Time on Work–Family Conflict

According to the time geography theory (Hägerstrand 1970), individuals conduct multiple activities on a daily basis which cannot be fulfilled at the same time and/or place. Therefore, traveling between different locations has become the need that individuals have to cover in space and time. An important property of time is zero-sum, indicating if more time is spent on commuting, less time would be available for other activities. Previous studies have shown that commuting displaces time for activities associated with one’s family and social life (Turcotte 2011; Wheatley 2012). Therefore, commute time is a situational factor that may impinge upon meeting responsibilities associated with different roles which, in turn, brings about conflict between one’s work and family roles.

Studies related to space-time strategies have focused on integrating working hours and commute time to balance home and work (Dijst 1999; Fanning Madden 1981; Fortuijn and Karsten 1989; Turner and Niemeier 1997). McQuaid and Chen (2012) found that the length of a commute is affected by the worker’s age, having children, the age of their youngest child, occupation, weekly pay, and mode of transport (with public transport being associated with longer commutes). In their study of commuter families, van der Klis and Karsten (2009) mentioned different strategies for dual career families to balance their work and home domains’ activities. Clearly, work family balance of a commuter family involves some sacrifice, which commuters would otherwise enjoy more without commuting. Although previous research has argued that commuting has affected work life balance, commute time between work and home as a specific variable has not been explored yet.

Commuting to work has become part and parcel of the life of an average worker (Olsson et al. 2013). Commuting need not be always stressful as people have reported the possibility of winding down and mentally creating a barrier between work and family (Wheatley 2012). However, people have reported less energy after commuting which in turn can affect their quality of life (de Geus et al. 2008). Women may be more affected as a longer commute may affect their sense of family responsibilities (Roberts et al. 2011), while men tend to report more time for leisure activities if they did not have to commute (Hilbrecht et al. 2013). Negative mood from traffic congestion, the need to leave home early to get to work on time, late arrival returning to home, congested trains or buses, etc. have a toll on commuters which can impact their time for family and quality of family life leading to work–family conflict (Cantwell et al. 2009; Christian 2012) including marriage dissolution (Sandow 2011). Commute time can also impact one's job domain including late arrival to work, negative mood, and low task performance (Hennessy 2008; Van Rooy 2006). Thus, we anticipate bi-directional interference between family and work domains.

The current study considers two types of commute time. The overall commute time refers to the absolute commute time spent on the round trip between work and home. The relative commute time refers to one's absolute commute time in relation to the overall commute time in their neighborhood (i.e., the commute ratio between one's absolute commute time and the average commute time of all working neighbors). The relative commute time is further elaborated in Hypothesis 6 (H6).

**H1** We predict a positive relationship between commute time (overall and relative) and work–family conflict (WIF; FIW).

### **Moderating Effect of Work Schedule Control on the Relationship Between Commute Time and Work–Family Conflict**

Work schedule control has been used by organizations to attract and retain workforce (SHRM 2010a). Work schedule control is the freedom to decide when the work can be done. Therefore, the focus is on having decision latitude over when the work will be done rather than on how it is to be done (Kelly and Moen 2007). Flexible or non-standard working hours have become common (Golden and Kim 2017) with such schedules influencing work and family dynamics (Beutell 2010). Work flexibility such as a flexible work schedule, working from home, telecommuting, etc. has been viewed as a favorable factor in facilitating reconciliation of work and family life. For instance, Anderson et al. (2002) found a positive relationship between the use of flexible work

arrangements and the degree to which employees experience negative work–home interference suggesting the beneficial effects of flexible work arrangements.

However, some studies have found negative relationships. For example, Eddleston and Mulki (2017) demonstrated that work–family integration increased family-to-work conflict and work-to-family conflict, and that an inability to disengage from work increased work-to-family conflict. Furthermore, strong work–family integration was found to be particularly harmful to male remote workers' work-to-family conflict, whereas a strong inability to disengage from work was found to be predominantly damaging to female remote workers' work-to-family conflict. Greenhaus and Beutell (1985) also argued that it cannot simply be assumed that work flexibility will inevitably reduce the work–family conflict. They argued that the degree of flexibility along with employee needs may jointly affect the prevalence of work–family conflict. In this study, our aim is not to test the main effects of work flexibility on work–family conflict. Instead, we argue that work flexibility would reduce commute time (e.g., avoiding 'rush hour' commutes) and ease the commuters' tension between time and space. Having work schedule control has a positive correlation with being committed to work and on having more balance between one's work and family (Allen et al. 2013; Beutell and O'Hare 2018). It is possible that control over one's work schedule may therefore impact the conflicting situation of commute time and its likely influence on work–family interaction.

**H2** Work schedule control is predicted to moderate the relationship between commute time (overall and relative) and work–family conflict such that those who have more work schedule control will experience less work–family conflict.

### **Moderating Effect of Childcare Hours on the Relationship Between Commute Time and Work–Family Conflict**

Childcare plays an important role in the lives of working parents especially for those whose work demands long work hours at the office or those who have to commute long hours to remain employed. Even in 2007, nearly 62% of married couples with children were dual career families (U.S. Bureau of Labor Statistics 2007) and this number has been on the rise. Childcare providers extend beyond formal childcare resources including but not limited to one's extended family members such as parents, friends, neighbors, etc. Many working parents would be unable to work in the absence of such quality and reliable childcare (Payne et al. 2012).

Unpredictability of commute time is a source of worry and stress (Evans and Wener 2006) for parents. Harmonizing

work and family duties becomes a regular challenge for many of them. Being with one's children becomes less likely as parents spend considerable hours at work coupled with a long commute home (Pocock et al. 2009). Accessibility to and affordability of childcare are sources of worry for many parents. Though some studies have shown that parents of younger children experience more work–family conflict than do parents of older children (Greenhaus and Kopelman 1981), we argue that parents who are able to successfully meet their childcare responsibilities despite other obligations, including work, may actually experience less work–family conflict. Childcare has been conceptualized as a time-related resource that “temporarily emancipates parents from childcare responsibilities and allows them to allocate that time to work” (Payne et al. 2012, p. 228). That is, when parents spend longer hours with their children, it may moderate the otherwise likely negative relationship between long commute time and work–family conflict. Because they are able to provide care and support for their children without having to rely on others to do so, this is likely to grant more emotional satisfaction and less negative feelings of the impact of commute on family duties.

**H3** Child care hours on work days are predicted to moderate the relationship between commute time (overall and relative) and work–family conflict in such a way that those who have longer child care hours will experience less work–family conflict.

### **Moderating Effect of Life Satisfaction on the Relationship Between Commute Time and Work–Family Conflict**

Life satisfaction refers to one's perception of the quality of life as a whole (Diener et al. 1985). Researchers argue that work–family conflict can be a source of stress that influences important psychological and physical outcomes (e.g., Bacharach et al. 1991; Frone et al. 1997). Empirical studies have demonstrated the significantly negative relationship between work–family conflict and life satisfaction (e.g., Beutell 2007; Higgins et al. 1992; Yucel 2017). A meta-analysis conducted by Kossek and Ozeki (1998) suggested a consistent negative relationship among all forms of work–family conflict and job-life satisfaction. On the other hand, there is a growing body of research examining the relationship between commuting and life satisfaction. Previous studies have consistently shown a negative relationship between commuting and life satisfaction (Choi et al. 2013; Nie and Sousa-Poza 2018; Olsson et al. 2013; Stutzer and Frey 2008). For example, a recent study by Lorenz (2018) found that longer commute distances were negatively associated with family life satisfaction and satisfaction with leisure.

Given the negative relationships between life satisfaction and commuting and between life satisfaction and work–family conflict, we argue that life satisfaction will weaken the relationship between commute time and work–family conflict. In general, if one is more satisfied with her/his quality of life, one will have less negative feeling about commute time and work–family conflict. Therefore, one with higher level of life satisfaction will perceive less work–family conflict due to long commute.

**H4** Life satisfaction is predicted to moderate the relationship between commute time (overall and relative) and work–family conflict such that participants reporting higher life satisfaction will experience less work–family conflict.

### **Effect of Geographic Context on the Relationship Between Commute Time and Work–Family Conflict**

Because commuting is an obligation that working adults assume in daily life, it imposes both spatial and temporal constraints in the choice of daily activity programs and individual mobility (Kwan 1999; Miller 2004). As such, the journey to work has received much attention in the geography and transportation literature that focuses on spatial accessibility to jobs (Preston and McLafferty 1999; Taylor and Ong 1995), job and housing balance (Hanson and Pratt 1988; Horner and Mefford 2007; Sultana 2006), activity-travel in space and time (Kwan 1999; Newsome et al. 1998), and the impact of telecommuting on everyday geographies (Mokhtarian et al. 2004; Ory and Mokhtarian 2015). Compared to research in management and human resources, geographers are particularly interested in learning how urban structure and land use affect commute distance/time and choice of mode (Schwanen et al. 2004; Schwanen and Mokhtarian 2005; Maoh and Tang 2012), and how commuting in turn shapes peoples' daily geographies and their choice of residential location (Li and Tong 2016; Prashker et al. 2008).

Measuring the physical structure of a geographic context is often achieved by street network densities, mixed levels of land uses, and counts/densities of urban opportunities. For example, using a gravity-based job accessibility index, Wang (2001) found urban land use largely explained how far people commute. People who had a closer spatial proximity to employment opportunities took significantly shorter commuting trips. Given the observed relationships between urbanization and reduced commute time, and between commuting and work–family conflict, we expect that the level of urbanization would indirectly affect work–family conflict by influencing commute time.

**H5** Commuting is expected to mediate the impact of urbanization on work–family conflict such that people who live in less urbanized areas would experience higher work–family conflict due to longer required commute times.

A long commute time has been found to have a negative impact on work and family balance as discussed earlier. But how much of a commute time is considered long? Morrow (2010) uses a psychological measure of time to define a relative commute time which refers to the difference between one’s current commute time and one’s subjective appraisal of a “reasonable” commute time. In the geography literature, an expected commute time is found to vary by different geographic contexts. For example, the impact of the local context on individual spatial behavior has been identified in various empirical analyses dealing with adoption of e-shopping (Farag et al. 2007; Ren and Kwan 2009), child behavior problems (Caughy et al. 2013), and commute satisfaction (Ye and Titheridge 2017), among others. These studies indicate that people’s choice of behavior is not only shaped by the socio-demographic and physical characteristics of their neighborhood, but also subject to peer-group influence and social learning (Baerenklau 2005; Yamauchi 2007). Compared to Morrow’s (2010) definition, which comes directly from one’s psychological process, the geographic viewpoint emphasizes the impact of neighborhood on one’s own perception of commute. Nonetheless, both perspectives suggest that people may feel differently about a 30-min commute trip. And thus the absolute measure of 30 min cannot reflect the true impact of commute on work–family conflict.

Since the survey instrument does not provide a specific variable to measure Morrow’s (2010) definition of relative commute, we adopted the geographic perspective of relative commute by considering the average commute time in the local area. Specifically, a relative measure of commute time is defined as the ratio between one’s actual commute time and the average commute time of all working neighbors, which not only accounts for the contextual effect on the perception of commute time, but also considers the influence of peer group on one’s own appraisal of commute.

**H6** Relative commute time is expected to moderate the relationship between commute time and work–family conflict in such a way that those who travel relatively longer than their neighbors will experience more work–family conflict.

## Data and Methods

### Sample

The sample consisted of participants in the 2008 *National Study of the Changing Workforce* ( $N = 3,502$ ) conducted by Harris Interactive. This is a nationally representative probability sample of working adults in the United States. The research instrument was constructed by the Families and Work Institute (Public Use Files: <http://www.familyandwork.org>) using items from previous surveys in consultation with subject matter experts.<sup>1</sup>

Prospective participants were selected based on the following criteria: (1) worked at a paid job or operated an income-producing business; (2) were 18 years or older; (3) were in the civilian labor force; (4) resided in the contiguous 48 states; and (5) lived in a non-institutional residence—i.e., household—with a telephone. Eligible participants were randomly selected within households when multiple household members met selection criteria. Participants were offered a cash honorarium for their participation. The questionnaire construction carefully followed Institutional Review Board (IRB) guidelines to protect human subjects and guarantee their anonymity.

With respect to type of employment, 50% worked for a private, for-profit company, 10% worked for a non-profit organization, 19% were self-employed, and 20% worked for a governmental agency. Regarding the gender of the participants, the sample included 1664 men (47.5%) and 1838 women (52.5%).

### Measures

Each of the measures used in this study was developed by the Families and Work Institute for their ongoing studies of the U.S. workforce. The questions were based on a professionally developed national probability study and were vetted by work–family subject matter experts.

#### Absolute Commute Time

Commute time was measured in minutes: average overall commute time to work and return home (round trip).

<sup>1</sup> The 2008 dataset contained various commuting variables that allowed us to conduct the analyses of this study. A subsequent dataset reduced the sample size by 58%, didn’t assess work-family synergy (only work-family conflict), and had one general question on commuting that was not sufficient for our analyses.

### Relative Commute Time

The relative commute time was measured by participant's absolute commute time in relation to the overall commute time in their neighborhood. The residential neighborhood was defined at the zip code level. Specifically, it was measured as the ratio between the specific individual's commute time and the average commute time of all working neighbors (commute ratio).

### Urbanization

Urbanization was derived from the Dominant Tapestry Urbanization Group Code included in Esri's<sup>2</sup> Tapestry Segmentation dataset. Urbanization was coded 1 = urban, 2 = suburban, and 3 = rural. The urban areas include the categories of Metro Cities, Urban Periphery, and Principal Urban Centres. The suburban areas include the category of Suburban Periphery and, the rural areas contain the categories of Semirural and Rural.

### Work Schedule Control

This variable was assessed using the question "Overall, how much control would you say you have in scheduling your work hours?" There were five response scales: 1 (*none/no control*), 2 (*very little control*), 3 (*some control*), 4 (*a lot control*), and 5 (*complete control*).

### Hours Spent on Child Care

Child care was assessed using the following item: 'On average, on days when you're working, about how much time do you spend taking care of or doing things with your children?'. Responses were recorded in hours of child care on work days.

### Work–Family Conflict

We assessed work interfering with family (WIF) and family interfering with work (FIW). WIF ( $\alpha = .82$ ) was measured using five items (e.g., I frequently have no energy to do things with my family because of my job). FIW ( $\alpha = .81$ ) was also comprised of five items (e.g., I don't have enough time for my job because of my family). Scale items were summed and averaged. Higher scores indicated higher levels of work–family conflict.

<sup>2</sup> Esri is the world's leading GIS software company that develops various mapping applications and data analytics. Its products (particularly ArcGIS Desktop) enable industries to deliver location intelligence capabilities across their enterprises.

### Life Satisfaction

Life satisfaction was measured using the following item: 'All things considered, how do you feel about your life these days?' Respondents rated their degree of life satisfaction on a four-point scale (ranging from 1 = very dissatisfied to 4 = very satisfied). Higher scores indicated higher life satisfaction.

### Gender

Gender was coded 0 = male and 1 = female.

### Data Analysis

Data were analyzed using Pearson product-moment correlations and multiple regression. Moderation and mediation effects were tested using the Hayes (2018) PROCESS Macro (Version 3.1). All analyses used SPSS Version 25.

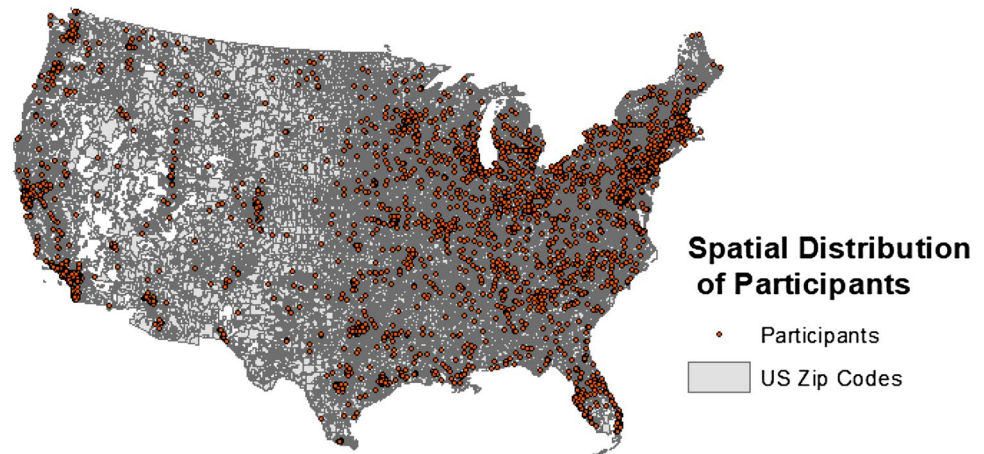
The commute ratio variable was generated using a geographic information system. To calculate this relative measure, the first step was to geocode the individual participants on the map. Figure 1 shows the spatial distribution of the participants at the zip code level. Due to missing or wrong zip code information, we were able to successfully geocode 3442 participants located in 3011 zip code areas.

The 2010 U.S. Decennial Census SF3 dataset contains various aggregate commute information for a zip code area, such as the percentage of working population that travels between 10 and 14 min and the aggregate travel minutes for the entire working population. Using the zip code boundary data and the associated commute information, we joined the aggregated neighborhood commute information with each participant to calculate the commute ratio. This spatial join process was completed using ArcGIS. The variable of commute ratio was then exported to SPSS for further analysis. The similar spatial join was applied to assign a specific urban code from the Tapestry Segmentation dataset to each participant.

### Results

Table 1 shows the means, standard deviations, and inter-correlations for the major study variables. Notice that all but two correlations were statistically significant (mostly because of the large sample size) and mostly in the predicted direction.

Hypothesis 1 (H1) predicted a positive relationship between commute time and work–family conflict (WIF; FIW). Specifically, H1 argued that higher commute time between home and work would be associated with the higher levels of work–family conflict. We tested this hypothesis

**Fig. 1** Spatial distribution of participants**Table 1** Means, standard deviations, and intercorrelations for major study variables

Variable	1	2	3	4	5	6	7	8
1. Overall commute time	–							
2. Commute time ratio	.88**							
3. Work schedule control	.00	.00						
4. Child care hours	– .05	– .05	.03					
5. WIF	.05**	.05**	– .17**	– .05				
6. FIW	– .01	.01	– .04*	– .03	.54**			
7. Life satisfaction	.01	– .00	.14**	.03	– .34**	– .29**		
8. Gender	– .05**	.06**	– .02	.08**	– .01	.05**	– .34**	
Mean	52.87	1.03	3.17	3.44	2.50	2.11	3.30	– .01
SD	51.20	1.05	1.41	4.74	.87	.70	.72	.50

Overall commute time in minutes. Gender was coded as 0 = male and 1 = female

WIF work interfering with family, WFS work–family synergy

\* $p < .05$ . \*\* $p < .01$  (2-tailed).  $N = 3502$  ( $n = 1249$  for child care hours)

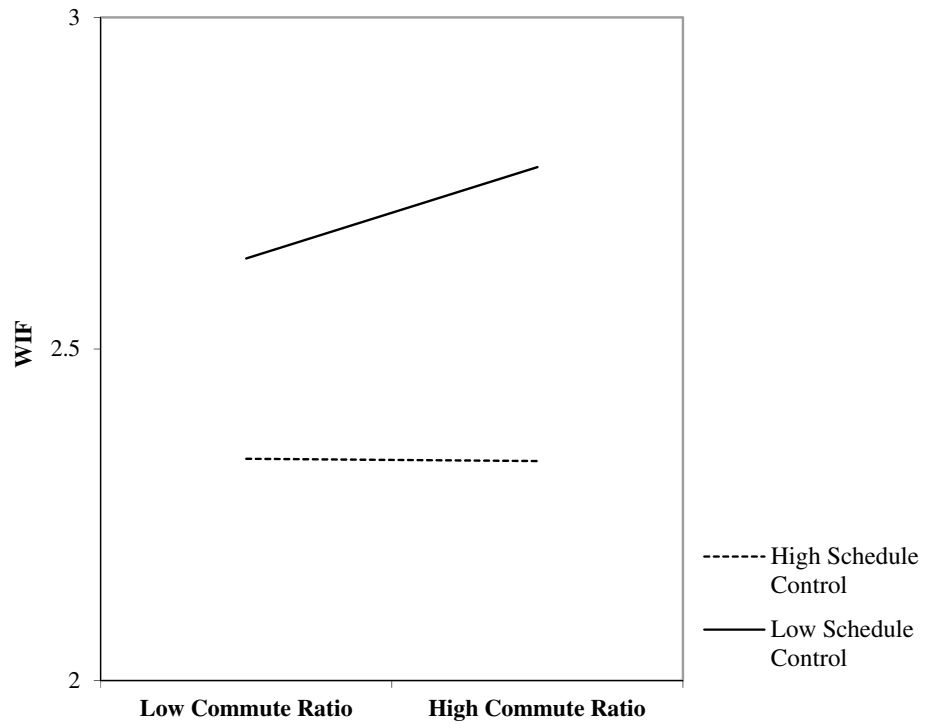
using multiple regression. Commute-times were used as independent variables (absolute commute time from work to home and commute time ratio) with WIF and FIW as dependent variables controlling for gender. Findings indicated that overall commute time between work to home was positively and significantly related to WIF ( $\beta = .06$ ,  $p < .01$ ). Commute time ratio was also significantly related to WIF ( $\beta = .06$ ,  $p < .004$ ). However, neither absolute commute time nor commute ratio (commute time/average commute time) was significantly related to FIW. As such, partial support was found for H1.

Hypothesis 2 predicted that work schedule control would moderate the relationship between commute time and work–family conflict (WIF; FIW) such that participants who have more work schedule control will experience less work–family conflict. We used Hayes' (2018) PROCESS Macro Model 1 to test the moderation effects (10,000 bootstrapped samples) of work schedule control on the commute time—work–family conflict relationship. Separate analyses were conducted for WIF and FIW. The overall

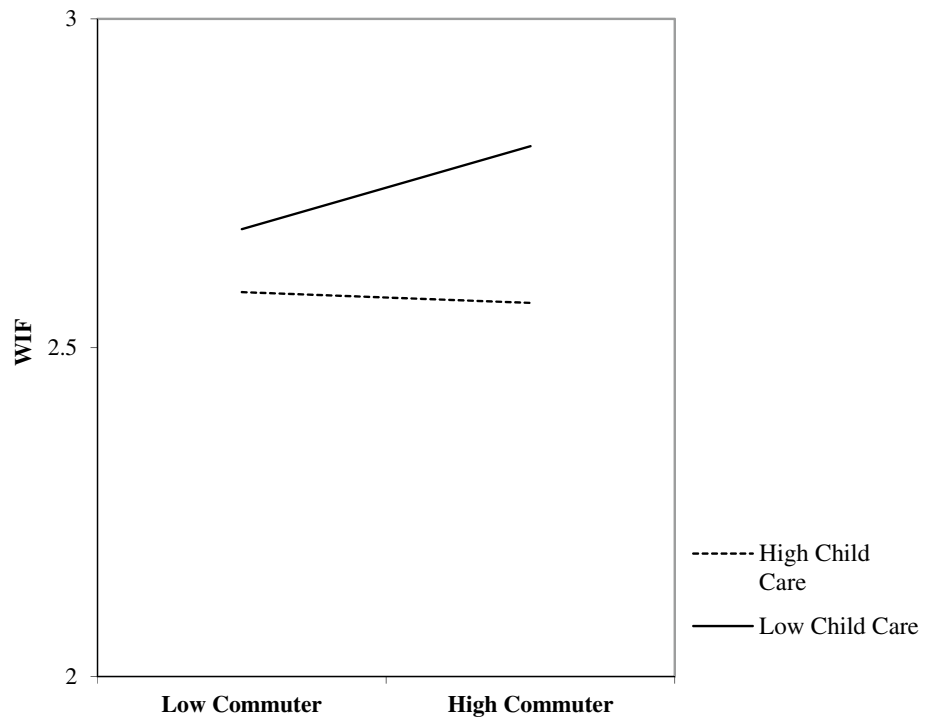
model for WIF was statistically significant ( $F(3, 2779) = 26.58$ ,  $p < .001$ ). The interaction term was also significant ( $F(1, 2779) = 5.98$ ,  $p < .01$ ) indicating that schedule control and commute time combined to predict WIF. As Fig. 2 reveals, the highest levels of WIF were reported by respondents with low schedule control and longer commutes. The analysis with FIW as the dependent variable was not statistically significant. Thus, H2 was partially supported.

Recall that Hypothesis 3 predicted that hours spent on child care would moderate the relationship between commute time and work–family conflict such that those who spend more hours caring for children will experience less work–family conflict. The overall model predicting WIF was statistically significant ( $F(3, 1128) = 8.50$ ,  $p < .001$ ). The interaction term was also significant ( $F(1, 1128) = 4.69$ ,  $p < .05$ ) indicating that hours spent with children on work days and total average commute time can predict WIF. Figure 3 shows that, as predicted, those with more work day hours devoted to child care tend to report lower levels of WIF. Respondents with longer commutes and fewer hours spent

**Fig. 2** Moderation of the effect of commute ratio on WIF at values of the moderator schedule control



**Fig. 3** Moderation of the effect of commuter on WIF at values of the moderator child care

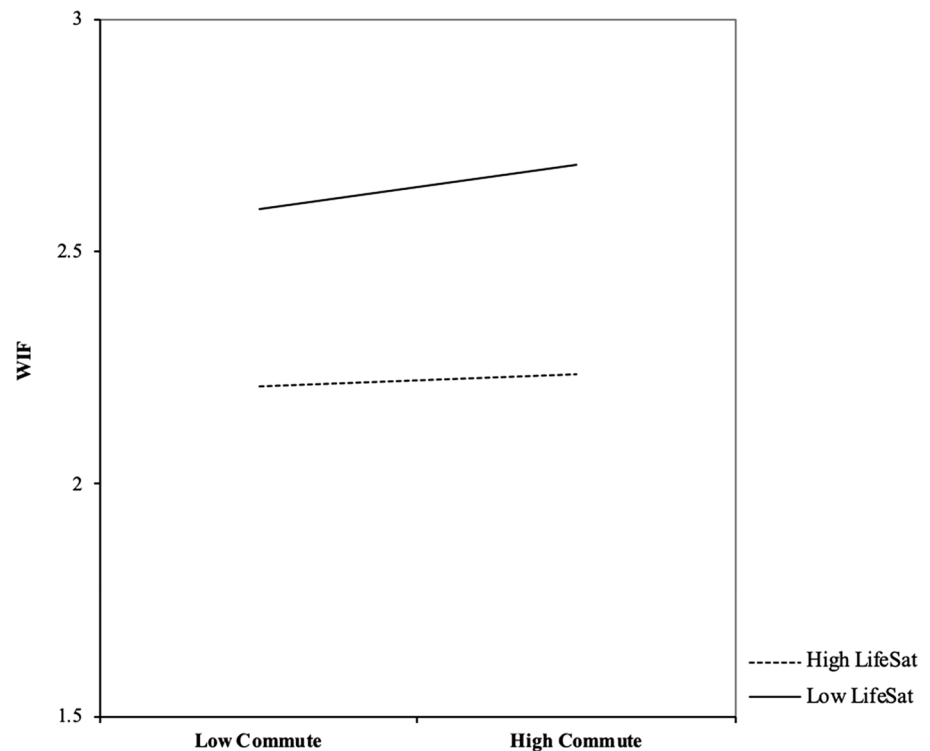


on child care reported the highest levels of WIF. Similar findings were found for commute time ratio interacting with child care hours to predict WIF. The equations predicting FIW were not statistically significant. Thus, H3 was partially supported.

Life satisfaction was the focus of Hypothesis 4. We predicted that life satisfaction would moderate the relationship between commute time and work–family conflict such that participants reporting higher life satisfaction will experience less work–family conflict. PROCESS Macro Model 1 (Hayes



**Fig. 4** Moderation of the effect of commuter on WIF at values of the moderator life satisfaction



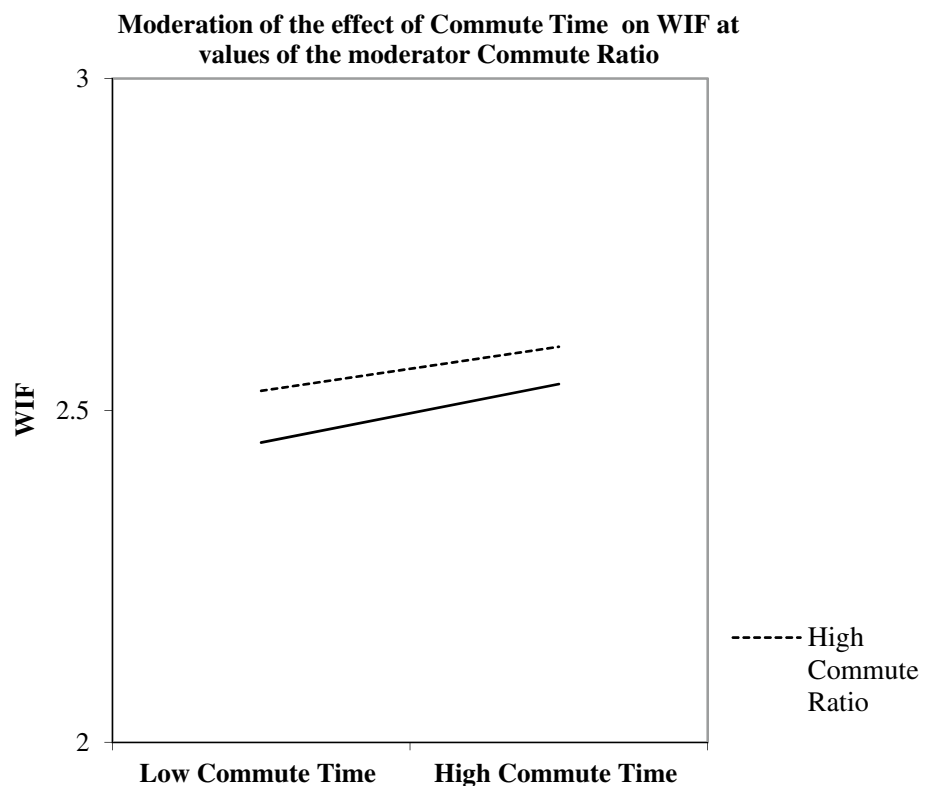
2018) was used to test for the moderating effect of life satisfaction. The overall model was significant ( $F(3, 2883) = 128.28, p < .0001$ ). The interaction between average overall commute time and life satisfaction was also significant ( $F(1, 2883) = 4.80, p < .05$ ). Respondents with higher levels of life satisfaction experienced lower WIF regardless of average commute time while those with lower life satisfaction and a longer average commute reported the highest levels of WIF (see Fig. 4). The analysis for FIW did not reveal significant moderation for life satisfaction-overall average commute time relationship. The ratio of commute time to average commute ( $\beta = .13, p < .05$ ) and life satisfaction ( $\beta = -.39, p < .0001$ ) revealed significant direct effects on WIF, however, no moderation effect was found. Thus, H4 was partially supported.

Hypothesis 5 assumed an indirect effect of urbanization on work–family conflict through commute. The categorical exogenous variable of Urbanization has three classes of Urban, Suburban, and Rural with Urban coded as the baseline. The results from the Hayes PROCESS Macro model 4 showed that compared to urban residents, suburban residents commute significantly longer ( $p < .001$ ). While there was no significant direct impact of urbanization on work–family conflict, a significant indirect effect of Suburban on work–family conflict through commute was identified ( $p < .01$ ). This finding supported the expectation that suburban residents tend to have lower job accessibility and experience

longer commute which, in turn, increases their work–family conflict. However, urban and rural residents were found not to differ significantly by commute time, which might be due to the types of jobs that rural residents have and their life styles. It might also be excessively far for those people to take a job in an urban/suburban area. Thus, H5 was partially supported.

Hypothesis 6 predicted that relative commute time would moderate the relationship between commute time and work–family conflict in such a way that those who travel relatively longer than their neighbors will experience higher work–family conflict. Comparing the individual commute time reported in the sample to the aggregate neighborhood commute time, we found that about 60% of the participants travelled less than the average of their neighbors and approximately 17% of the participants had the top 10-percentile travel time in their residential area. The Hayes PROCESS Macro model 1 was used with commute time as the independent variable, work–family conflict as the dependent variable, and commute ratio as the moderator variable. The overall model was significant ( $F(3, 2782) = 7.48, p < .001$ ). The interaction between average commute time and commute ratio was also significant ( $F(1, 2782) = 13.62, p < .001$ ). As reported in Figure 5, people who travel longer than their neighbors experience higher WIF compared to those who spend less time on commute than their neighbors. Thus, hypothesis 6 was supported.

**Fig. 5** Interaction between average commute time to work, commute time ratio, and work–family conflict



## Discussion

This study examined the role of commute time, relative commute time, and urbanization on work–family conflict. Variables including work schedule control, childcare hours, and life satisfaction were also included in this study. Consistent with the role theory, fulfilling one’s work and family duties and responsibilities tends to increase satisfaction while the inability to meet expectations is likely to produce conflict. Job factors alone may not fully explain one’s work satisfaction. Similarly, family or personal lives alone may not be the only predictor of family satisfaction or life satisfaction. Rather, both work and family are important in the lives of many individuals and, with experiences in one domain impinging on the other, thereby affecting overall life satisfaction.

Analysis on the first hypothesis revealed that a higher commute time (actual time and commute time ratio) between work and home tends to result in higher levels of work interfering with family life. It is likely that performing one’s duties at work combined with a longer commute time suggests that employees may not be able to engage in family activities as expected. For example, cooking a meal, having dinner with family, or being available for children may be affected by a longer commute time. It is also likely that a longer commute time means that one has to leave home early before being able to ensure a restful night sleep or attend to family responsibilities. Our results provide evidence of the

impact of commute time on work–family conflict such that those with a longer commute time would experience more work–family conflict.

Analyses of the second through fourth hypotheses revealed the significant moderating effects of variables from multiple domains. As predicted, conflict between work and family was reduced by having higher work flexibility (work schedule control), given the same amount of commute time, suggesting the importance of providing employees with some freedom over their work schedules in reducing the tension between commuters’ time and space. The moderating role of childcare hours between commute time and work–family conflict was also significant. We proposed that parents with longer commutes who were still able to spend time with their children/in childcare, would experience less conflict attributable to commuting. The hypothesis was supported bringing home the point that work–family conflict can be reduced by fulfilling one’s family duties in the midst of work-related responsibilities. Life satisfaction has also been strongly suggested as a moderator of the relationship between commute time and work–family conflict. Our results have reinforced the existing literature that life satisfaction plays an important role in relation to both commute and work–family conflict indicating that life satisfaction can temper the negative perception of work–family conflict caused by long commutes.

In addition, the impact of geographic context on commute and work–family conflict was tested by examining the role

of contextual variables. Although work–family conflict is largely explained by individual socioeconomic and demographic characteristics, our study confirms the moderating effect of relative commute time on work–family conflict. This adds to the existing literature that commute time relative to other employees and neighbors needs to be considered when one attempts to draw conclusions on the impact of commute time on an individual's life. This finding suggests that interactions between household members, among neighbours, and between neighborhoods should be considered in the future work–family research studies.

It was also discovered that urbanization indirectly affects work–family conflict by influencing the required commute time. The finding that higher job accessibility leads to lower work–family conflict has important policy implications for urban planning. To enhance residents' quality of life, mitigating spatial mismatch between home and workplace seems to be an important issue for city planners to address. Although a similar conclusion was drawn in the transportation literature (Blumenberg and Manville 2004), the new trend in telecommuting may bring new insights into the urban policy-making process. Previous research has shown that the impacts of telecommuting on local travel patterns are highly complex, including substitution, generation, and modification (Mokhtarian 1998; Saxena and Mokhtarian 1997). When commuting trips are largely removed for telecommuters, they may undertake more outdoor activities for leisure or recreation purposes and therefore the travel patterns may be altered. In addition, telecommuting has been reported to exert complex consequences on gender inequality. For instance, researchers expect that telecommuting should promote women's job accessibility by eliminating the need for travel and by decreasing the gendered division of domestic labor when men could spend more time at home and take more household related responsibilities. However, some empirical results have shown the opposite findings (Travis 2002). Although how telecommuting would affect work–family conflict has not been fully explored, it is anticipated to be multidimensional and multifaceted.

### Limitations and Future Research

A number of limitations to this study should be noted. The database is not as recent as we would have liked but we needed a national probability sample with the right mix of work–family, commute time, and geographical variables to examine our hypotheses. Next, we did not measure different types of support available for respondents in their work lives, as well as their family lives, which might have influenced their responses to certain questions. Future research should try to incorporate other variables that might potentially impact how commute time would affect work–family conflict. Additionally, we only explored work–family conflict in

this study. As work–family interface research has not only focused on work–family conflict, as well as work–family synergy, it would be interesting to study the construct of synergy/facilitation in relation to commute time in the future research. It might also be interesting to focus on specific occupations to see if results exclusive to particular professions can be observed.

Commute is not only measured by time or distance, but also by transport mode. In general, active travel mode, such as walking and biking, has been found to be associated with the least commuting stress or the highest travel satisfaction compared to public transit and automobile (Ye and Titheridge 2017; Denstadli et al. 2017). This is probably because non-motorized mode of transportation is less likely to be affected by delays and traffic congestions, and therefore provides commuters with the most control over their schedule and flexibility. The comparison results between public transit commuters and car commuters are rather mixed. Some studies identified that the bus commuters experienced the lowest travel satisfaction due to initial waiting, long walking, poor weather conditions, and a lack of control (St-Louis et al. 2014; Ye and Titheridge 2017). Others, on the contrary, reported that car commuters did not differ significantly from bus commuters or faced higher commuting stress due to road congestion (Gatersleben and Uzzell 2007; Denstadli et al. 2017). In addition, the choice of travel mode is highly affected by both personal characteristics and the built-in environment (De Vos et al. 2016), which suggests that the built-in environment may moderate the relationship between travel mode and work–family conflict. However, due to the data limitation on commuting mode, we could not include this variable in our analysis. Future research should consider this factor as it plays a significant role in flexibility, schedule control, and time management, which in turn will influence work–family conflict.

Because of the unavailability of home and workplace addresses, a detailed analysis of job accessibility and trip-chaining could not be considered in this study. Research has found that working adults often combine non-work out-of-home activities, such as shopping, into commute trips as a strategy for coping with the high space-time constrains they experience (McGuckin et al. 2005; Strathman et al. 1994). This suggests that the journey to work needs to be analyzed in relation to other daily activities. It is reasonable to assume that an individual would feel less stressed by a commute trip if he/she can fulfil multiple purposes in one journey. With home and workplace addresses, a detailed analysis of job accessibility and trip-chaining could be integrated in the future analysis. For example, using the construct of activity space formed between home and workplace (Li and Tong 2016), accessibility on the journey to work can be evaluated at a finer scale.

The commuting patterns that were extant at the time of data collection represent a decade long process of employees living in bedroom communities and commuting to cities using private or public transportation. COVID-19 has caused a temporary shift in commuter behavior but it might return to the previous pattern soon or status quo could occur quite quickly. Many employees are anxious to get back to the office. While some companies will use hoteling locations in the suburbs in the short run, many companies still value line of sight management, requiring employees to work in the office. The pressures associated with commuting after the pandemic are essentially the same pressures that existed when our data were collected. It would be interesting to explore the change of commuting patterns caused by COVID-19 pandemic and how it would impact on work–family conflict once the data become available.

## Conclusion

Although the existing literature has paid some attention to how commuting influences work and family domains, the specific inclusion of absolute and relative commute time has been conspicuously absent in relation to work–family conflict. This study not only adds new insights into the connection between commute time and work–family conflict, but also extends the results to multiple domains including the work domain (work schedule control), family domain (childcare hours), and the overall life domain (life satisfaction). In addition, the advanced spatial analysis has enhanced the research model by exploring the impact of geographic context on commuting and work–family conflict. Taken together, the present results offer some new avenues for advancing work–family research. The findings of this study seem even more consequential in an era when the younger generations enter the workplace valuing, indeed expecting, work life balance and believing that work and family are equally important in one’s lives. This further provides implications for managers when trying to enhance employee work commitment and promote positive work performance.

With the COVID-19 pandemic currently raging, our study has brought the issues associated with commuting to light. Such a study is imperative as people are more likely to telecommute or find innovative ways to fulfill their work responsibilities in the light of the pandemic. Contemporary commuting involves staying alert to combat COVID-19 virus infection by wearing masks, maintaining social distance in public places and at work, washing hands often, ensuring one’s work space suitable for social distancing, etc. Commuting in buses or trains may be restricted for many employees due to the need to maintain social distancing and the increasing spread of the COVID-19 virus. More people may opt to carpool with people they know or drive

their own car. Many employees are working from home or have to adjust their work lives, thus commuting to work is currently curtailed for many employees. It is important for us to study how these changes would impact work–family dynamics.

The impact of COVID-19 pandemic on commute is two-fold. For those who still commute, they may report a new set of challenges to their work–family dynamics. COVID-19 has its toll on the traffic. People are more likely to venture out for necessities only rather than for leisure. Therefore, employees are less likely to be stuck in traffic, which reduces the need to leave early for work or the likelihood of coming home late. Such changes would influence work family dynamics of employees who commute to work. For those who telecommute, they may save time and energy without commuting to and from work so they can spend more time at home to meet family duties more efficiently, which will reduce the occurrence of work–family conflict. However, they may find it overwhelming that the boundary between work and family is progressively blurry, and thus may experience a diverse set of work–family interface issues. Humans need space as much as they need socializing opportunities. Therefore, commuting may have given people the time they need to decompress from work or take a break from family obligations. However, a lack of barriers between family and work may have negative consequences. For instance, having to find childcare while working from home may be a challenge for some. Alternatively, others may enjoy the fact that working from home provides them with the time they previously lacked to keep an eye on children. We encourage future researchers to study the impact of COVID-19 on commuting aspects of employees and how that, in turn, affects their work and family dynamics.

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## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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